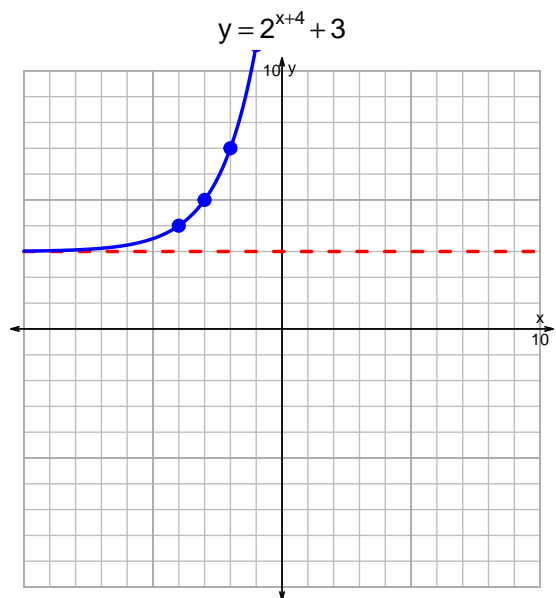
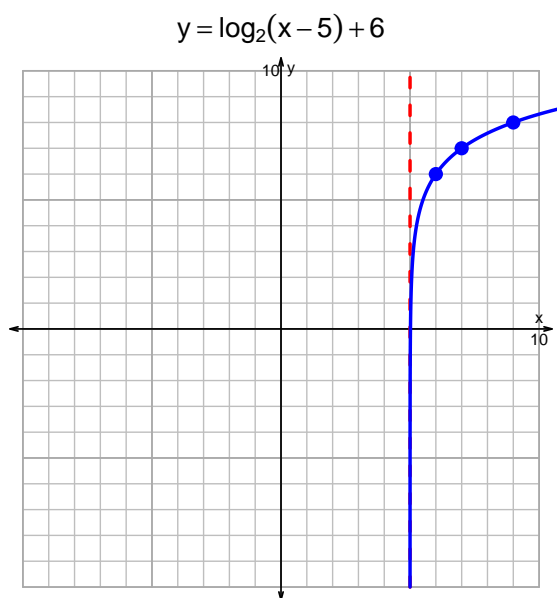


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v289)

1. Graph $y = \log_2(x - 5) + 6$ and $y = 2^{x+4} + 3$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$-17 = \left(\frac{-4}{3}\right) \cdot 2^{-5t/7}$$

Divide both sides by $\frac{-4}{3}$.

$$\frac{17 \cdot 3}{4} = 2^{-5t/7}$$

Take log, base 2, of both sides.

$$\log_2 \left(\frac{17 \cdot 3}{4} \right) = \frac{-5t}{7}$$

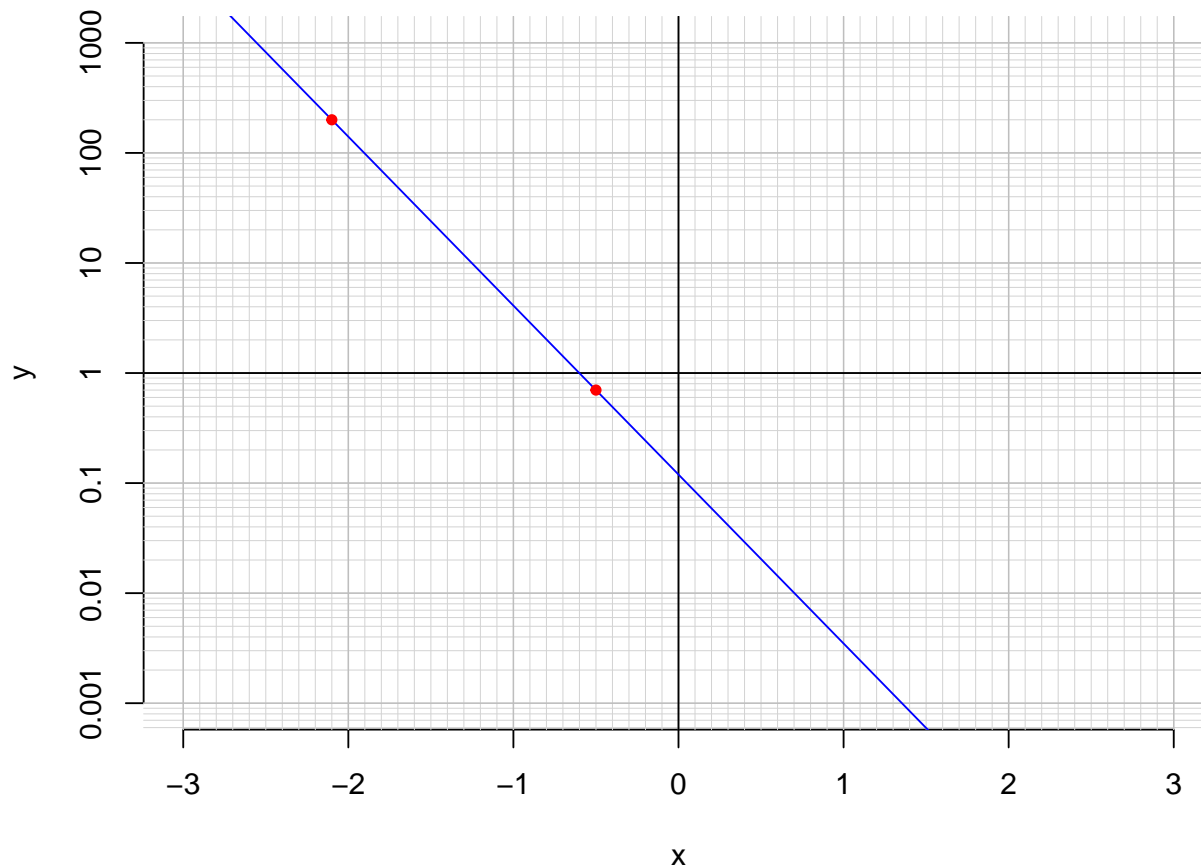
Divide both sides by $\frac{-5}{7}$.

$$\frac{-7}{5} \cdot \log_2 \left(\frac{17 \cdot 3}{4} \right) = t$$

Switch sides.

$$t = \frac{-7}{5} \cdot \log_2 \left(\frac{17 \cdot 3}{4} \right)$$

3. An exponential function $f(x) = 0.12 \cdot e^{-3.53x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(-2.1)$.

$$f(-2.1) = 200$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{-1}{3.53} \cdot \ln\left(\frac{x}{0.12}\right)$$

- c. Using the plot above, evaluate $f^{-1}(0.7)$.

$$f^{-1}(0.7) = -0.5$$